We claim:

1. A method of producing a structured layer, which comprises the following steps:

providing a prestructured substrate;

applying to the prestructured substrate a precious metal and a donor material containing an additive which is not a precious metal in two or more layers;

subjecting the layers to heat treatment at a temperature of between approximately 400°C and approximately 800°C, such that the additive diffuses into the precious metal and an alloy layer is produced; and

polishing the alloy layer by chemical and mechanical means.

2. The method according to claim 1, wherein the donor material essentially comprises only the additive.

3. The method according to claim 1, which comprises applying the donor material to the substrate before the precious metal.

4. The method according to claim 3, which comprises alternately applying several layers of the donor material and

at least one layer of the precious metal, starting with a layer of the donor material.

5. The method according to claim 1, wherein the precious metal is applied to the substrate before the donor material.

6. The method according to claim 1, wherein several layers of the precious metal and at least one layer of the donor material are applied alternately, starting with a layer of the precious metal.

7. The method according to claim 1, wherein the thickness of the donor material is selected such that during heat treatment the donor material essentially diffuses completely into the precious metal.

8. A method of producing a structured layer, which comprises the following steps:

providing a prestructured substrate;

simultaneously applying to the prestructured substrate a precious metal and an additive which is not a precious metal using a PVD method, such that an alloy layer is produced; and

polishing the alloy layer by chemical and mechanical means.

9. The method according to claim 8, wherein the precious metal is an element from Group 8b of the Periodic Table of the Elements and/or is Au.

10. The method according to claim 9, wherein the precious metal is from Group 8b of the Periodic Table of the Elements Pt and/or is Ir.

11. The method according to claim 1, wherein the precious metal is an element from Group 8b of the Periodic Table of the Elements and/or is Au.

12. The method according to claim 11, wherein the precious metal is from Group 8b of the Periodic Table of the Elements Pt and/or is Ir.

13. The method according to claim 1, wherein the additive is Ti, TiO_x, Ta, W, Bi, Ru and/or Pd.

14. The method according to claim 8, wherein the additive is Ti, TiO_x, Ta, W, Bi, Ru and/or Pd.

15. The method according to claim 1, wherein the donor material is Ti, TiO_x, TiN, Ta, TaN, W, WN, Bi, BiO_x, IrO_x, $IrHfO_x$, RuO_x and/or PdO_x.

16. The method according to claim 8, wherein the donor material is Ti, TiO_x, TiN, Ta, TaN, W, WN, Bi, BiO_x, IrO_x, $IrHfO_x$, RuO_x and/or PdO_x.

17. The method according to claim 1, wherein the layer produced contains between approximately 5 and approximately 30 atom % of the donor material.

18. The method according to claim 8, wherein the layer produced contains between approximately 5 and approximately 30 atom % of the donor material.

19. The method according to claim 1, wherein a slurry containing water, abrasive particles and at least one oxidant is used for the chemical mechanical polishing.

20. The method according to claim 19, wherein Al_2O_3 particles or SiO_2 particles are used as abrasive particles.

21. The method according to claim 19, wherein the abrasive particles have a size of approximately 50 to 300 nm.

22. The method according to claim 19, wherein H_2O_2 is used as oxidant.

23. The method according to claim 19, wherein the slurry has at least one stabilizer.

24. The method according to claim 23, wherein the stabilizer is polyacrylic acid.

25. The method according to claim 8, wherein a slurry containing water, abrasive particles and at least one oxidant is used for the chemical mechanical polishing.

26. The method according to claim 25, wherein Al_2O_3 particles or SiO_2 particles are used as abrasive particles.

27. The method according to claim 25, wherein the abrasive particles have a size of approximately 50 to 300 nm.

28. The method according to claim 25, wherein H_2O_2 is used as oxidant.

29. The method according to claim 25, wherein the slurry has at least one stabilizer.

30. The method according to claim 29, wherein the stabilizer is polyacrylic acid.

31. A memory cell comprising at least one storage capacitor, a prestructured substrate, a structured alloy layer, and contact holes connecting said storage capacitor and said substrate; wherein said alloy comprises a precious metal selected from the group consisting of gold and the metals of Group 8b of the periodic table and a non-precious metal additive selected from the group consisting of Ti, TiO_x, Ta, W, Bi, Ru and Pd; wherein said capacitor includes an upper electrode of a platinum metal, a ferroelectric layer, and a lower electrode of said alloy; wherein said prestructured substrate comprises a substrate having a surface bearing at least one transistor, each transistor having two diffusion zones disposed on said surface and channel zones disposed between said diffusion zones, said channel zones being separated from gate electrodes by gate oxide on said surface,and at least one insulating layer with depressions therein overlapping said contact holes; and wherein said depressions are filled with barrier material up to a prescribed depth and then with said alloy to provide said lower electrode.

32. The memory cell according to claim 31, wherein said alloy comprises platinum and titanium.

33. The memory cell according to claim 31, wherein said upper electrode metal is platinum.

34. The memory cell according to claim 31, wherein said ferroelectric layer is strontium bismuth tantalate.

35. The memory cell according to claim 31, wherein said barrier material is iridium oxide.